

## CLAIMS

What is claimed is:

1. A method for automatically operating an irrigation controller comprising the steps of:
  - 5 a. providing said controller with a preliminary irrigation schedule for a geographic location;
  - b. computing a water budget ratio by comparing current local geo-environmental data with stored local geo-environmental data; and
  - c. modifying said preliminary irrigation schedule based upon said ratio.
- 10 2. The method of claim 1 wherein said local geo-environmental data comprises a table of extraterrestrial radiation (RA) values arranged by date and by approximate latitude.
3. The method of claim 2 comprising the additional step of determining the approximate latitude for the geographic location from user input.
- 15 4. The method of claim 3 wherein the computation of the water budget ratio comprises the additional steps of:
  - a. computing a standard temperature budget factor;
  - b. computing a periodic temperature budget factor; and
  - c. dividing said periodic temperature budget factor by said standard
  - 20 temperature budget factor.
5. The method of claim 4 wherein the computation of both said standard temperature budget factor and said periodic temperature budget factor utilize an extraterrestrial

radiation value from said table.

6. The method of claim 5 comprising the additional steps of inputting a current date, inputting an expected maximum temperature and inputting a time frame for said temperature.

5 7. The method of claim 6 comprising the additional step of computing the standard temperature budget factor by multiplying the expected maximum temperature by an extraterrestrial radiation value for the time frame of said expected maximum temperature.

10 8. The method of claim 7 wherein said stored local geo-environmental data comprises the expected high temperature during the summer months.

9. The method of claim 8 wherein said current local geo-environmental data is collected over a period of twenty-four hours.

15 10. The method of claim 6 comprising the additional steps of computing said current temperature budget factor by multiplying an actual recorded maximum temperature taken over a previous predetermined period and an extraterrestrial radiation value for said geographic location during said period.

11. The method of claim 1 comprising the additional step of programming said controller to water an irrigation area according to said modified irrigation schedule only upon the occurrence of a predefined environmental event.

20 12. The method of claim 11 wherein said predefined environmental event comprises the lack of rainfall within a predefined period of time.

13. The method of claim 11 wherein said predefined environmental event comprises a current temperature exceeding a predefined minimum irrigation temperature.

14. A method for automatically operating an irrigation controller comprising the steps of:

5 a. providing said controller with a current date, an expected maximum temperature, a time frame for said temperature, approximate latitudinal information, and a preliminary irrigation schedule;

b. computing a water budget ratio from current local geo-environmental data and stored local geo-environmental data comprising the steps of:

10 1. computing a standard temperature budget factor from said stored local geo-environmental data by multiplying the expected maximum temperature by an extraterrestrial radiation value for the time frame of said expected maximum temperature at a latitude determined from said approximate latitudinal information,

15 2. computing a periodic temperature budget factor by multiplying an actual recorded maximum temperature taken over a previous predetermined period by an extraterrestrial radiation value at said determined latitude during said particular period, and

20 3. computing said water budget ratio by dividing said periodic temperature budget factor by said standard temperature budget factor; and

c. modifying said preliminary irrigation schedule based upon said ratio.

15. The method of claim 14 wherein said modification of said preliminary irrigation schedule comprises multiplying said preliminary irrigation schedule by said water budget ratio.
- 5 16. The method of claim 14 comprising the additional step of programming said controller to water an irrigation area according to said modified irrigation schedule only upon the occurrence of a predefined environmental event.
17. The method of claim 16 wherein said predefined environmental event comprises the lack of rainfall within a predefined period of time.
18. The method of claim 16 wherein said predefined environmental event comprises a  
10 current temperature exceeding a predefined minimum irrigation temperature.
19. An apparatus for automatically adjusting irrigation watering schedules, comprising:
- a. an input device;
  - b. a microprocessor;
  - 15 c. at least one data storage device having instructions for computing a water budget ratio using current local geo-environmental data and stored local geo-environmental data;
  - d. at least one temperature sensor;
  - e. a power source; and
  - 20 f. at least one irrigation water output cutoff switch.
20. The apparatus of claim 19 wherein said input device is remotely programmable.

21. The apparatus of claim 19 wherein said data storage device comprises a table of extraterrestrial radiation values arranged by date and by approximate latitude.
22. The apparatus of claim 19 wherein said instructions for computing a water budget ratio comprise dividing a periodic temperature budget factor by a standard  
5 temperature budget factor, wherein said microprocessor computes said periodic temperature budget factor by multiplying an actual recorded maximum temperature taken by said temperature sensor over a previous predetermined period and an extraterrestrial radiation value at a user-input approximate latitude during said particular period, and wherein said microprocessor computes said  
10 standard temperature budget factor by multiplying an expected maximum temperature entered by an operator by an extraterrestrial radiation value for a user-input time frame of said expected maximum temperature at said approximate latitude.
23. The apparatus of claim 19 further comprising at least one environmental sensor.
- 15 24. The apparatus of claim 23 wherein said environmental sensor is a precipitation sensor.
25. The apparatus of claim 19 wherein said power source comprises at least one battery.